



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Response to Office Action of November 7, 2002

TITLE OF INVENTION: Segmented Electrode Hall Thruster with Reduced Plume

APPLICANTS: Nathaniel J. Fisch and Yevgeny Raitses

ASSIGNEE (paperwork in progress): General Plasma Technologies LLC

APPLICATION NUMBER: 09/834/373

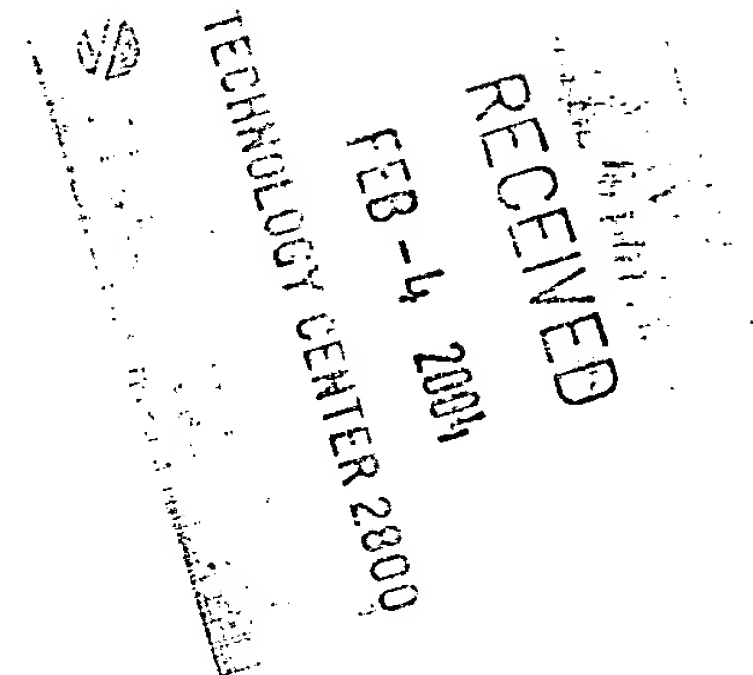
EXAMINER: Kevin Quarterman

ART UNIT: 2879

Hon. Assistant Commissioner for Patents

Box Patent Application

Washington DC 20231



Dear Sir:

This paper is responsive to the Office Action of December 1, 2003.

In Paragraph 7, Examiner objects to claims 1—20 based on a doctrine of double-patenting as being unpatentable over claims 1 — 20 of U.S Patent 6448721, “Cylindrical Geometry Hall Thruster,” by the same inventors as Application 09/834/373. The Examiner submits that “a cylindrical geometry is also annular or shaped like a ring.” Issue is taken with respect to this position. The cylindrical geometry thruster is entirely different from the annular geometry thruster, just as an annulus, mathematically the area bounded by two concentric circles, is topologically different in shape from a circle. In order make it absolutely clear that the mathematical rather than any popular definitions apply, the independent claims, Claim 1 and Claim 19, have been amended.

To make it clear all claims refer to an annular thruster region, in the mathematical sense of the word “annular”, as distinct from a cylindrical thruster region, both independent

claims are now amended to contain the restrictive clause, "an annular channel, said channel formed between an outer wall that forms an outer cylindrical structure and an inner wall that forms an inner cylindrical structure, with said inner and outer walls made of an insulator material."

In other words, the inner and outer walls form a region comprised of the space of a cylinder within a cylinder, which is distinct from a cylindrical space that would be the region interior to one cylinder only with no space excluded by the presence of an interior cylinder.

In view of the amended claims, it is deemed that the application does not suffer from double patenting. Therefore, rejection of claims 1 — 20 is inappropriate and should be reconsidered and withdrawn.

Please see enclosed three documents: Amendments to the Claims, Remarks, and Replacement Sheets for Figures 2 and 3. The Replacement Sheets correct minor mistakes in the drawings as detailed in the Remarks.

Respectfully submitted by,

A handwritten signature in black ink, appearing to read 'N. J. Fisch', written in a cursive style.

Nathaniel J. Fisch

Applicant

January 27, 2004